

ESG Presentation

TOYOBO CO., LTD

1. Our Sustainability Concept

Seiji Narahara

President & Representative Director, CEO & Co-COO

2. Management Base:

Safety, Disaster Prevention, Quality and Corporate Governance

Ikuo Takeuchi

Director & Managing Executive Officer,

Controlling Supervisor of Corporate Planning Division

3. Ability to Provide Solutions (contribution through our business)

Chikao Morishige

Senior Managing Executive Officer

Head, Films and Functional Materials Solutions Division

4. Concept of the Next Medium-Term Management Plan: Realization of Sustainability Management

Ikuo Takeuchi

Director & Managing Executive Officer,

Controlling Supervisor of Corporate Planning Division

- Fire accident
 - A fire broke out at our Inuyama Plant (Aichi Pref.) in Sept. 2020.
 - Two of our employees lost their lives.
 - The entire company will redouble efforts and work together on disaster prevention measures to become a safe company where such an accident will never happen again.

- Misconduct concerning quality
 - Rescission of UL's certification for engineering plastic product.
 - With respect to the above, rescission of ISO9001 certification and temporary suspension of certification.
 - Toward thoroughly reviewing the quality assurance process and promptly rebuilding an appropriate quality assurance system.

We deeply apologize for the considerable concerns and trouble caused.
We will do our utmost to restore trust and confidence.



1. Our Sustainability Concept

Corporate Philosophy System | PVVs

- **Principle**

"Jun-Ri-Soku-Yu"

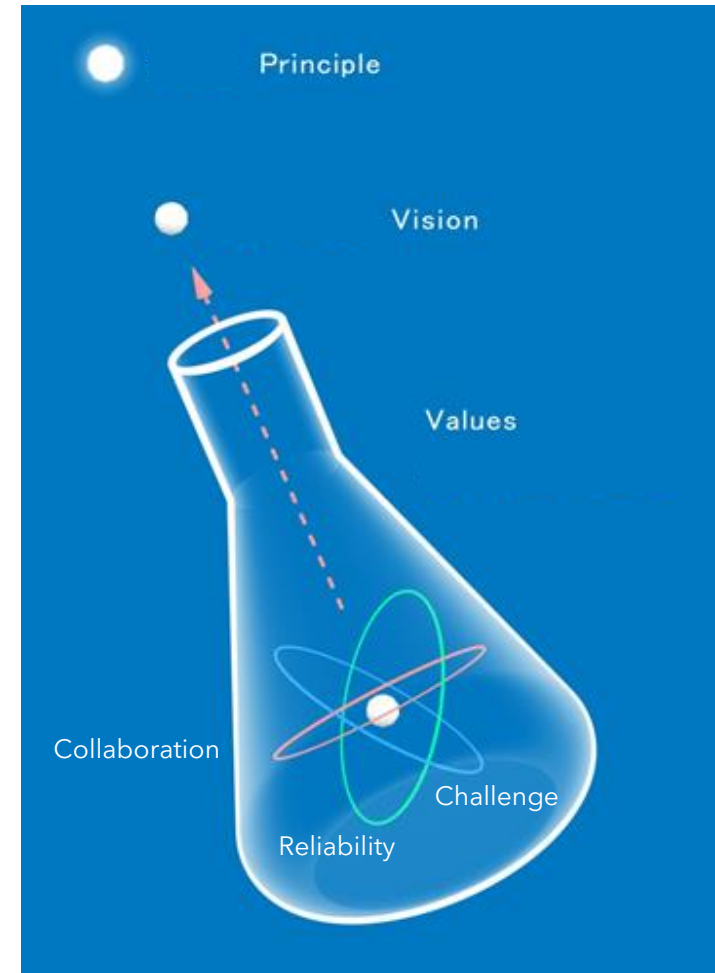
(adhering to reason leads to prosperity)

- **Vision**

We will continue to create **the solutions needed by people and the earth** with materials and science.

- **Values**

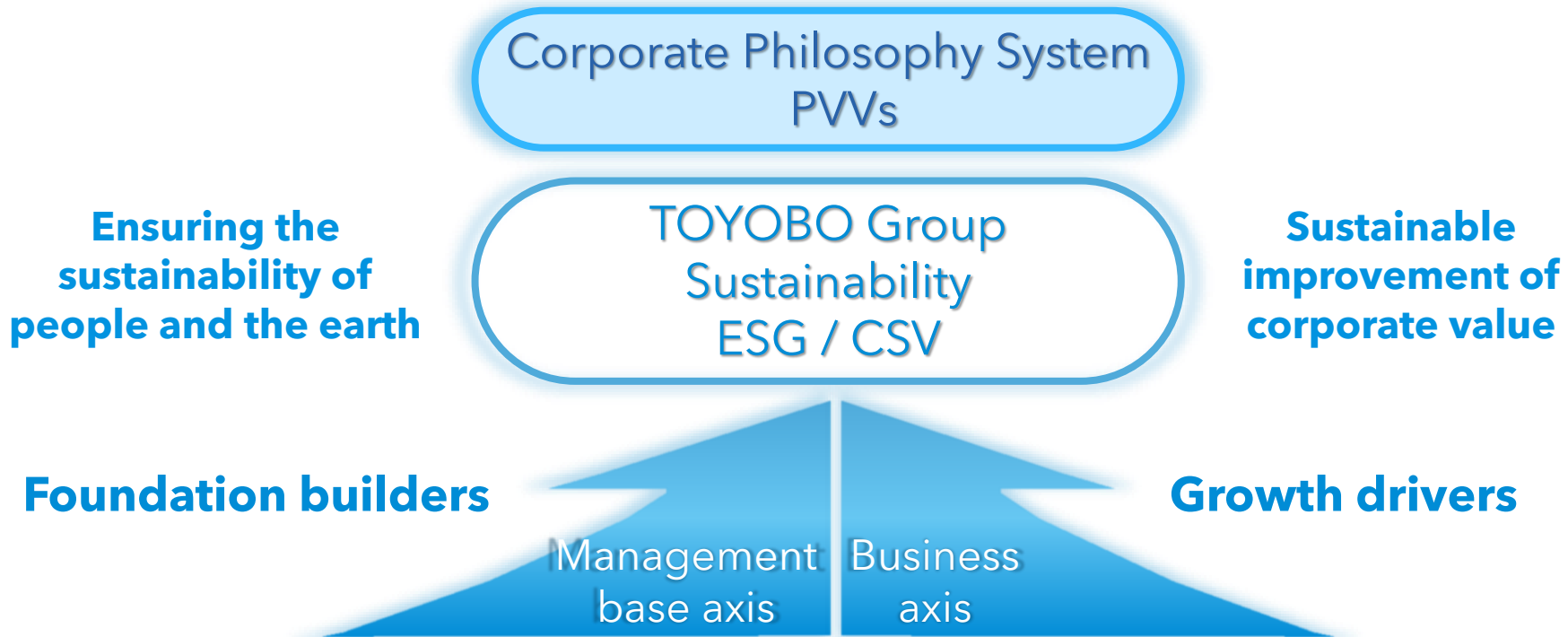
We welcome change, we enjoy change, and create change.



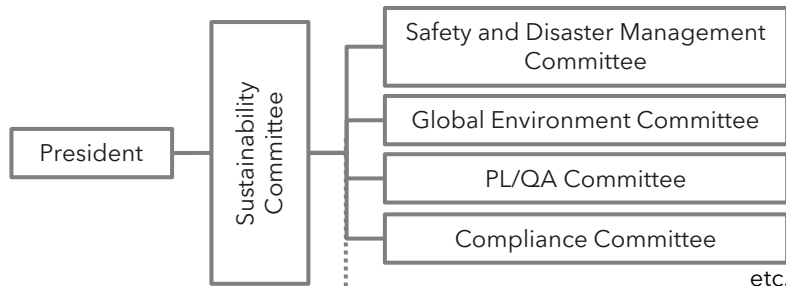
TOYOBO Spirit Challenge / Reliability / Collaboration

Concept of Promoting Sustainability

TOYOBO



- Operate in 9 committees under the Sustainability Committee (meeting 4 times / year), under the direct supervision of the President



- Promote CSV (creating shared value) in 4 solutions areas

- Films and Functional Materials
- Mobility
- Lifestyle and Environment
- Life Science

Sustainability Initiatives

E

Global warming prevention / Environmentally friendly products

- CO₂ reduction: 30% by FY3/31 (compared to FY3/14), net zero by FY3/51
- Achieve a sales ratio of 30% for "ECO-PARTNER SYSTEM" products ("ECOSYAL", "CYCLE CLEAN", RO membrane, VOC treatment equipment, etc.)

Realization of a circular economy

- Joint investment in R Plus Japan, Ltd.

S

HR management

- Female empowerment promotion (opening nursery schools, new graduate recruitment ratio 40%)
- Work style reform (shortening working hours, telework system)

Social contribution during the COVID-19 pandemic

- PCR test reagents / kits, mask materials, protective clothing that uses airbag fabrics, etc.

G

Corporate Governance Reform

- Increasing outside directors to 4 (of which 1 is a female)
- Division of responsibilities where the Board of Directors handles decision-making and supervision, the role of executive officers is executing business

Strengthening Risk Management

- Safety investment, disaster prevention comprehensive inspection

Initiatives to address sustainability issues go into full swing

Materiality | Identification Process

Ascertaining and listing social issues 333 items on a global scale
UN Global Compact, GRI Standards, SASB Standards, etc.



Internal survey and impact assessment
Officers, employees



Analyzing competitors, hearing views of external consultants, etc.

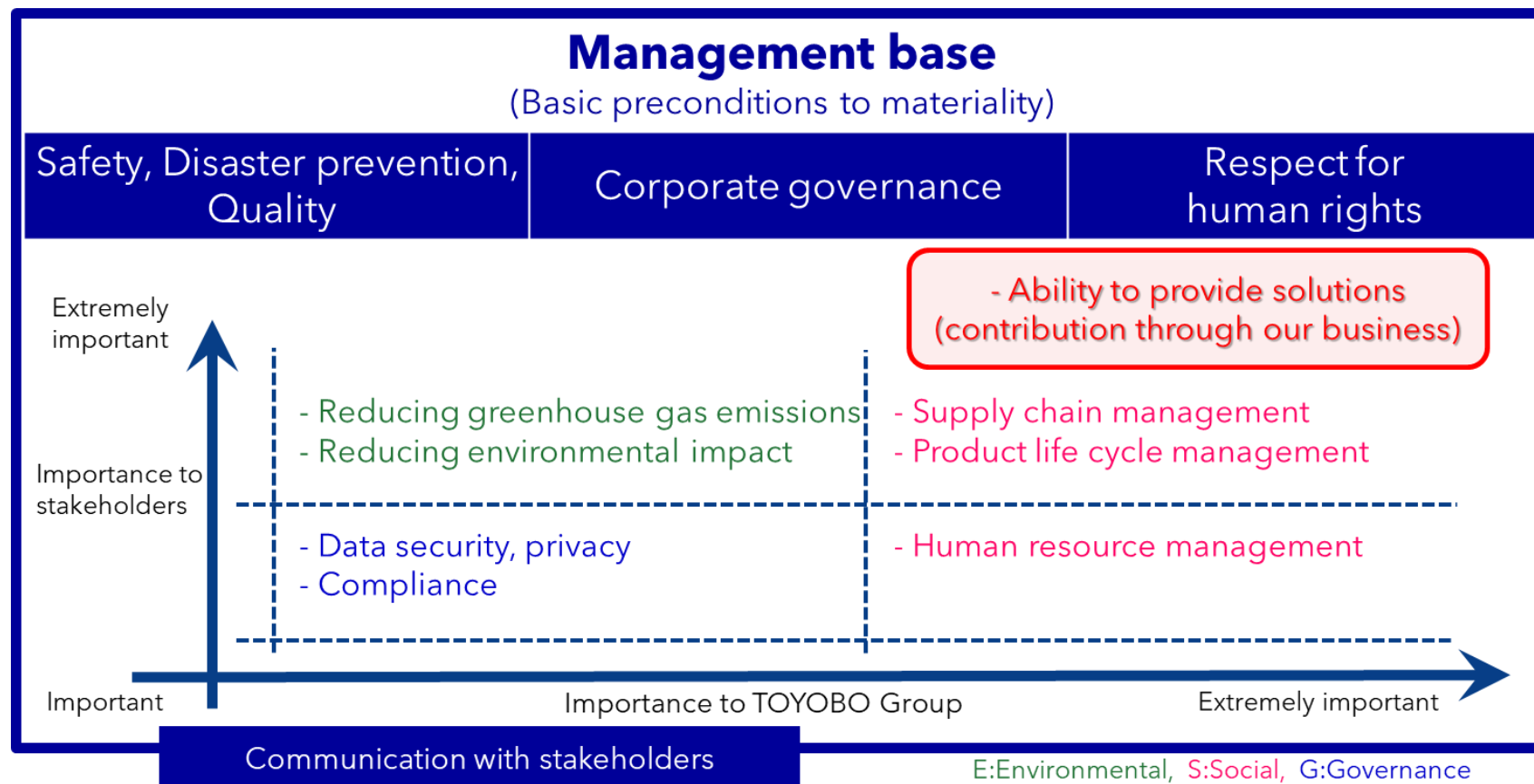


Determination of the Board of Directors
following discussion at management meetings

Materiality

Continuing to be a Group that “creates the solutions needed by people and the earth”

Innovation based on responsibility for the future: Realizing clean technology, high QOL, and future mobility



KPIs are being set (KPIs that have already been set have been published)

- Going forward, reflected in the Medium- to Long-Term Management Plan
- Conduct regular reviews through communication and engagement with all stakeholders.



2-1. Management Base: Safety, Disaster Prevention

A fire broke out at the Inuyama Plant (Aichi Pref.) on Sept. 27, 2020

Partial loss of the packaging film production line, and 2 employees died

Probable cause (accident investigation committee (in-house))

Sparks were generated from electric cables.

Sparks igniting caused nearby combustibles to catch fire.

The cause of the second fire accident after fire broke out at the Tsuruga Research and Production Center in 2018

Measures such as disaster prevention comprehensive inspection (risk map creation) have been taken with the inclusion of outside experts. However, there are still some unsatisfactory points.

- The expected range of ignition was too narrow
- Discovery of the fire was late
- The spread of fire could not be stopped by initial fire extinguishing
- Prompt evacuation preparation was not thoroughly implemented

Building a safe and secure workplace | Toward a company-wide initiative

Emergency safety meetings

(held 7 times from October 2020)

- Consisted of executives and the general manager in charge of safety and disaster prevention, raising awareness of issues related to safety and disaster prevention.
(includes general managers of Tsuruga Research and Production Center and Iwakuni Production Center)



Revising the System

(December 1, 2020)

- Newly established Safety and Disaster Management Division has strong authority under the direct supervision of the President (including authority to suspend production).

Disaster Prevention Audit Project

(From January 2021)

- Creating disaster prevention and auditing standards with the cooperation of outside experts (1 year).
- Toward building a disaster prevention system.

Security and disaster prevention measures

- Personnel
Recruitment of experts, review of factory staffing
- Training
Promotion of acquiring disaster prevention / safety qualifications
- Review of business policies
Review of regular maintenance and shutdown period
- Acceleration of safety and disaster prevention investment
80% scheduled to be completed by 2024*1

(Inspection and cleaning of ducts with particularly high risk will be done by 2Q FY3/22)

Accelerate removal of aging and unnecessary equipment

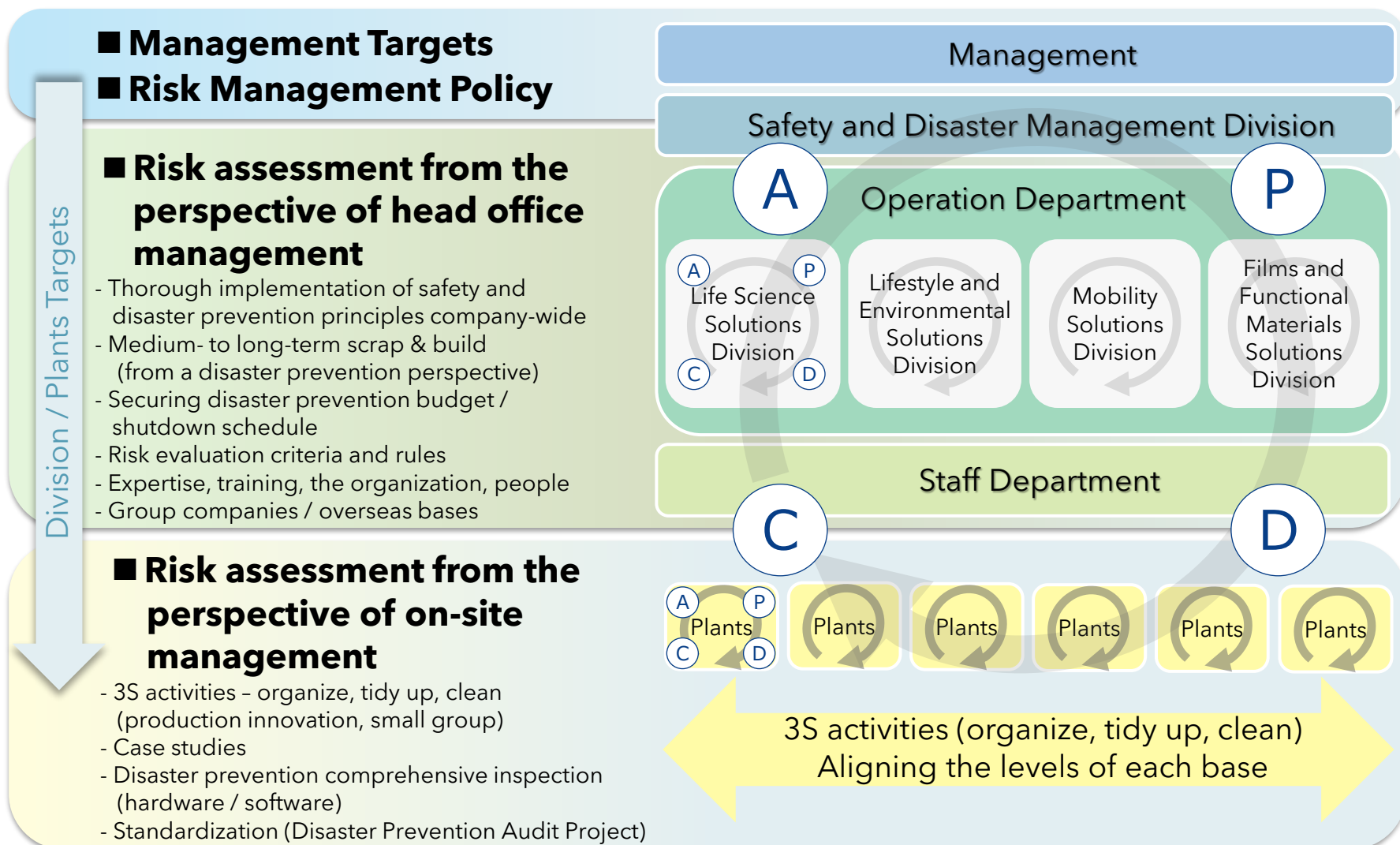
- 60% scheduled to be completed by FY3/21*1

*1 Plan as of the end of 2020

Mechanism for rotating the CAPD (check, action, plan, do) cycle for disaster prevention

Safety / security disaster prevention management system

Running the CAPD cycle throughout the company, head office, and plants



Promotion of on-site disaster prevention activities

Plant capable of safe and stable production

Do not start fires

Detect them early

Do not let fire spread

Everyone can evacuate reliably

Disaster prevention equipment

◇ Removal of aging and unnecessary equipment

◇ Strengthen maintenance (secure personnel)

◆ Safety and disaster prevention investment

◆ Strengthen inspections

- Exhaust ducts, fire prevention dampers
- Cables, sliding heat generating parts

◇ Creating a disaster prevention system that rotates around the entire company

- Visualization of on-site risks (able to speak about)
- Standardization of risk judgment, guidelines

◇ Securing a disaster prevention budget

(review of regular maintenance / shutdown period, etc.)

◆ On-site 3S activities (organize, tidy up, clean)

- Value the intentions and actions of those on-site

Mechanisms

Training

◇ Focus on disaster prevention training and education

- Promotion of acquiring disaster prevention / safety qualifications

- Establishment of training venues, company-wide safety education
- Securing instructors

◇ Meetings to exchange views across divisions and headquarters

◆ Night evacuation drills

◆ Case studies

◆ Technology transfer, training

◇ Strengthening the disaster prevention organization

- Recruitment of disaster prevention experts

- Review of staff assignments

◇ Assignment of disaster prevention personnel on-site

Personnel



2-2. Management Base: Quality

Misconduct concerning quality (Engineering Plastics Operating Department)

1. Rescission of UL's certification for "PLANAC", PBT resin (as of Oct. 28, 2020)

- At the time of verification testing for certified products, samples were submitted that had a different chemical composition from the product actually being sold.
 - Completed explanations to all customers.
- At present, there is no request for collection of products using "PLANAC".

Rescission of ISO9001 certification and temporary suspension of certification (as of Jan. 28, 2021)

- Certification granted to the Engineering Plastics Operating Department was rescinded.
 - Certification for the Functional Materials Production and Technology Department was temporarily suspended.
- Make every effort to lift the temporary suspension within 6 months.

2. Rescission of UL's certification for engineering plastic product (as of Feb. 3, 2021)

- Applicable products: "VYLOPET", "GLAMIDE", "PELPRENE"
- Reason for rescission of certification:
Chemical composition of the product for which certification was acquired differing from that of the product actually being sold / production at a factory without UL's certification, etc.
- Continue to verify the performance levels by third-party evaluation organizations to report and discuss with our clients.

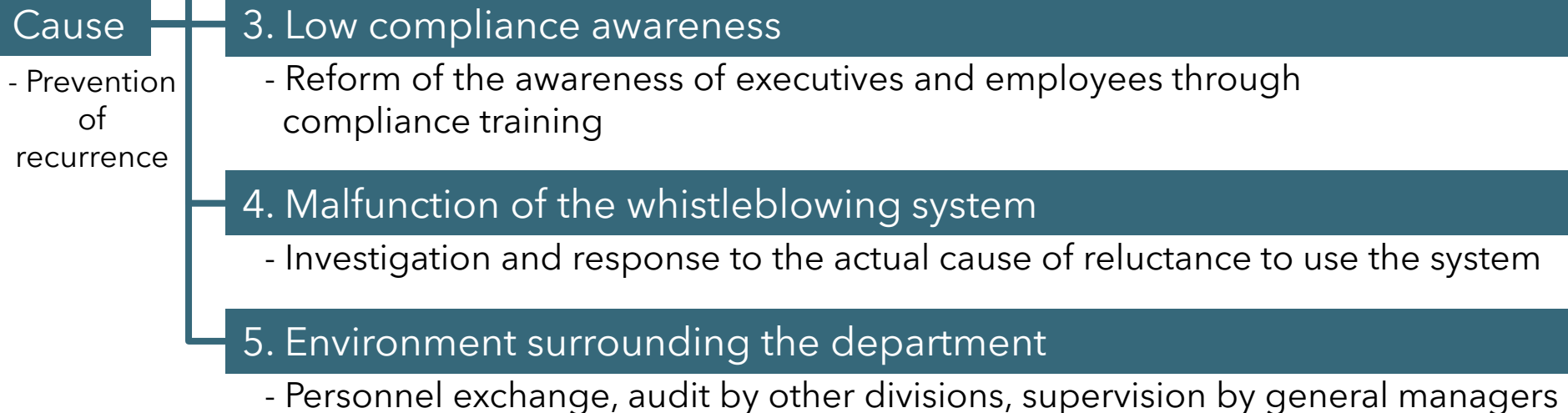
Results of the third-party investigation of the "PLANAC" case



(December 29, 2020)

From the investigation report by the third-party investigators
(lawyers of Irokawa Legal Professional Corporation)

- : Recommendations for countermeasures



Company-wide initiatives to prevent and eradicate quality misconduct

Aim: manufacturing that promises safety and security to customers from the customer's perspective

[Opportunity]
Cannot commit
fraud

[Motivation]
Will not commit
fraud

[Justification]
Fraud will not be
tolerated

[Ignorance]
Knowing
the rules

[Opportunity]
Change the mechanism

- ◆ Compliance with QA system (strengthening gate checks)
- ◆ **Review of PL / QA assessment**
 - **Add sampling and unannounced inspections**
- ◇ Creating a mechanism that can see risks
- ◆ Systematization of handling data on quality

[Motivation]
Change the culture

- ◆ Back to the basics of "Jun-Ri-Soku-Yu"
- ◆ Penetration and thorough implementation of "safety first" as policy from the top
- ◆ **Human resources rotation / performance evaluations**
- ◇ **Strengthening the quality-related organizational structure**
 - **Three lines of defense**

- ◆ **Review of compliance training**
 - **Creating an environment where dialogue and consultation can be conducted**
- ◆ Quality Assurance Manual Case Report
- ◆ PL accident response training, PL / QA seminars

[Justification]
Change awareness

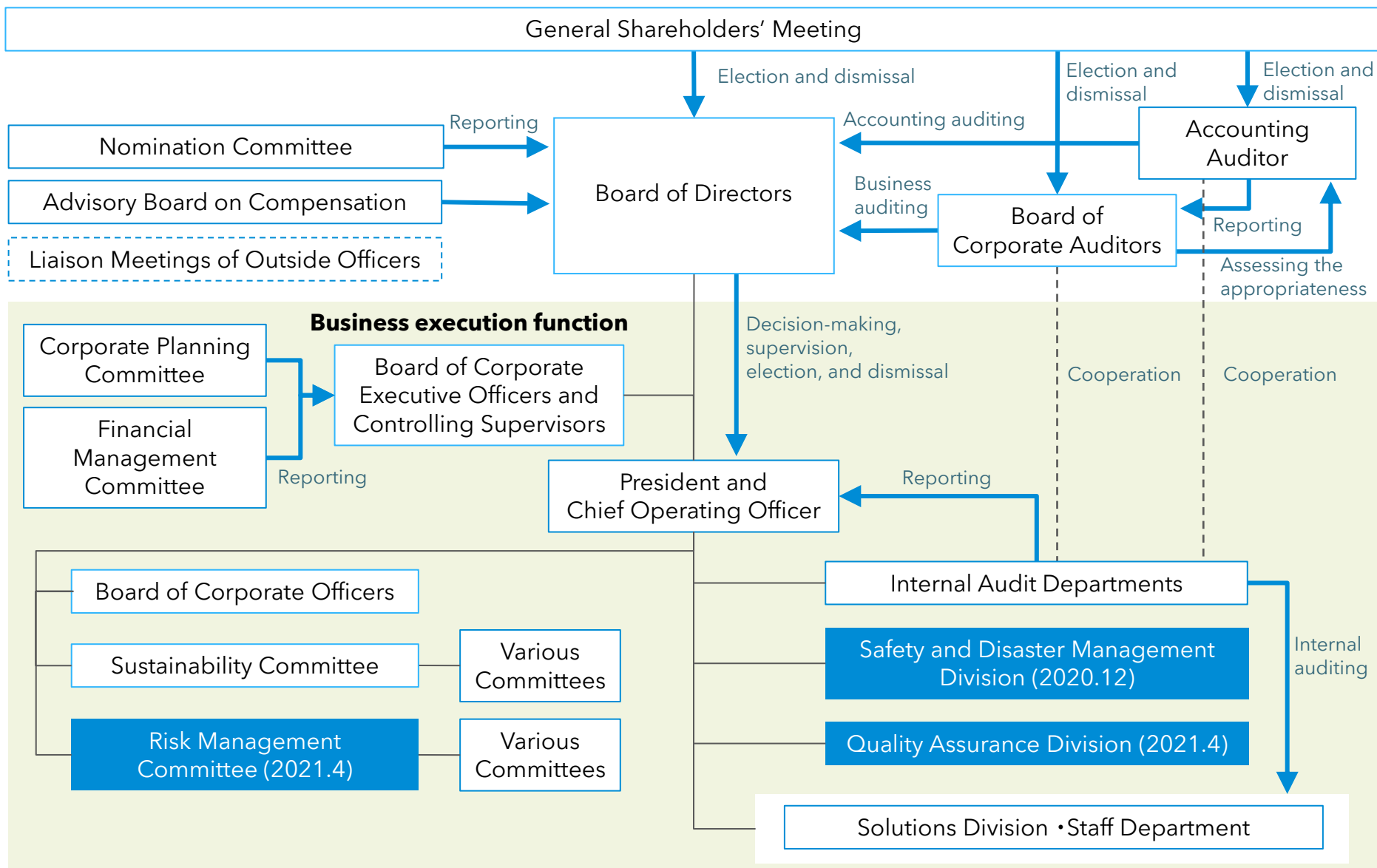
- ◆ **Strengthening QA training program**
 - New employee training
 - On-site leader class training, etc.
- ◆ Rules / expertise / laws

[Ignorance]
Increase knowledge



2-3. Management base: Corporate governance

Corporate Governance Structure



Progress in system enhancement

Year	Objective	Initiative
1998	- To promote companywide compliance activities as a key element of management	- Established the Ethics Committee (the current Sustainability Committee)
2004	- To clarify management accountability by strengthening the supervisory function and shortening the term of office - To ensure transparency and fairness in procedures for determining officer compensation	- Appointed one outside director, shortened the term of office for directors to one year - Established an Advisory Board on Officer Provisions, etc. (the current Advisory Board on Compensation)
2005	- To split the decision-making/supervisory and executive functions	- Introduced a corporate officer system, reduced the number of directors
2015	- To strengthen the supervisory function by multiple appointments - Utilization of the function of outside officers - To ensure transparency and fairness in procedures for nominating/dismissing directors	- Increased number of outside directors to two - Establishment of an outside officer liaison meeting. Hold regular information exchange meetings - Established the Nomination Committee
2016	- Extracting issues from the Board of Directors and continuing improvement activities	- Made an analysis/evaluation of the overall effectiveness of the Board of Directors. To be conducted every year going forward

2018~ Further promotion of system enhancements based on revisions to the Corporate Governance Code

2018	- To ensure diversity among members of the Board of Directors	- Increased number of outside directors to three, raising their ratio to one third of all directors.
2019	- To further promote diversity among members of the Board of Directors - To offer longer term incentives and realize greater sharing of value with shareholders	- Increased number of outside directors to four (adding a female director) - Revised the officer compensation system (introduced compensation in the form of restricted stock units)
2020	- Further promotion of clear separation of "decision-making and supervision" by the Board of Directors and "business execution" by executive officers	- Raise the standard for agenda items of the Board of Directors

- **Separation of CEO and Chairman of the Board of Directors**
- **Under consideration for enhancing the function of the advisory board on nominations and compensation**
- **PLANAC Incident Response Committee (auditors, outside directors)**
- **Scheduled to establish a risk management committee**
- **Strengthening internal audits**



3. Ability to Provide Solutions

(contribution through our business)

Targeted form of the Solutions divisions

SOLUTION=To solve current/future social challenges from the end customer's point of view

Goal

- World top supplier of "Green" film
- General Resin Provider

Make liquid crystal display highly functional
"COSMOSHINE SRF"

Reduce Food Loss
"ECOSYAL"



Reduce Raw Materials
"CYCLE CLEAN"
"SPACECLEAN"



For IOT
"COSMOPEEL"

Mobility

- Top supplier of Airbag Fabric
- Top supplier of Engineering Plastic in category
- Building partnership world-class car manufacturers

For Car weight saving
Engineering Plastics



Protect Safety of passengers
Airbag Fabric



Lifestyle and Environmental

- World-class supplier of Functional non-woven fabric
- Establishment of Environmental Solution businesses
- Functional Fibers× Marketing Power by Trading firm→ Organizer of Industrial and Life materials

Activated Carbon Fiber
For VOC recovery



Seawater desalination membrane



High antibacterial cushion



Filter to protect the body from harmful substances

Non-woven fabric for preventing soil contamination

Life Science

- Top Solution Provider in Japan of Infectious disease genetic diagnosis
- World top supplier Medical Membrane

Diagnostic enzyme and analyzer

Medical device that promotes regeneration of peripheral nerves



Research Reagents for COVID-19

Medical membrane for treatment and improvement of QOL of dialysis patients



Toward realization of a symbiotic society with plastics

Plastic products handled by the TOYOBO Group

Shift to
"renewable"
Recycle + Bio based Materials

Circular Economy

To achieve
"zero waste" emission

Materials/Chemicals/Thermal
- R Plus Japan, Ltd.
- "TOYOBO GS Catalyst" etc.

Recycle

More than one approach toward achievement



Recycle

Raw Materials

Production

Consumption

Biomass/Biodegradable Plastics
- PEF
- "BIOPLANA" etc.

Reduce

Volume reduction, thickness reduction, use of single materials
- "CYCLE CLEAN"
- "SPACECLEAN" etc.

Toward realization of a symbiotic society with plastics

"CYCLE CLEAN"

- Use 80% or more of PET bottle recycled resin
- Thickness 12 μm (\leftarrow 30 μm)
- For PET bottle labels



"SPACECLEAN"

- Polyester shrink film with excellent low-temperature high shrinkability
- Thickness 20 μm (\leftarrow 40 to 50 μm)
- For beverage labels



"ECOSYAR"

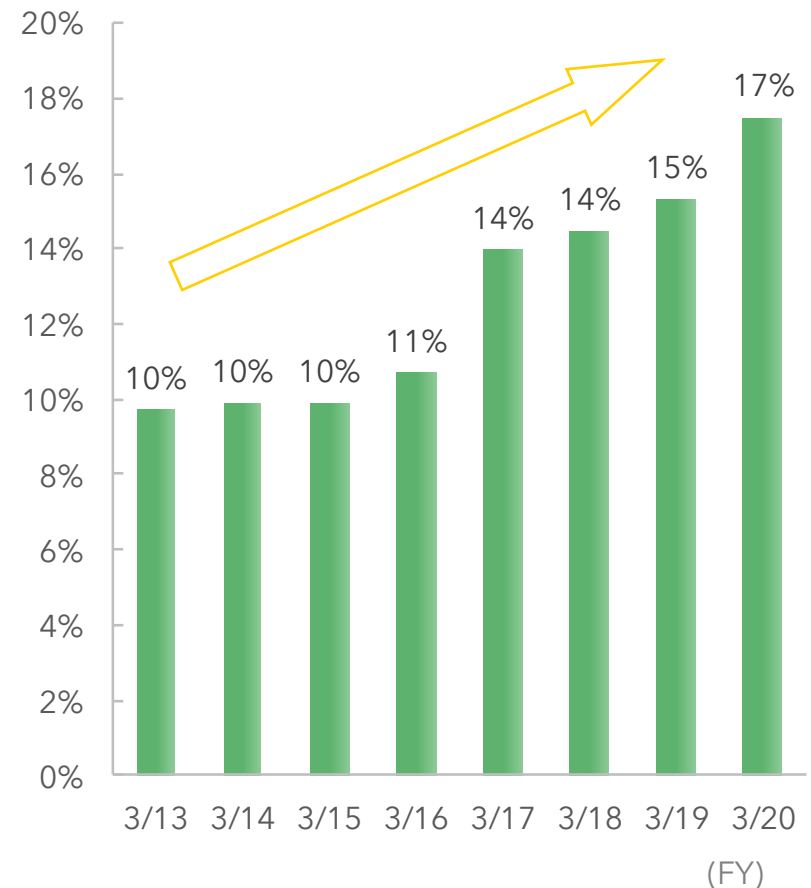
- Transparent vapor deposition film. Non-PVDC, non-aluminum foil
- Contributes to extending the expiration date on food products
- For retort pouches, boiled foods, and dried foods



"BIOPLANA"

- Uses 17% plant-derived ingredients

Ratio of environmentally friendly products in sales of packaging films



Toward 100% renewable plastic (2050)

Renewable = recycle + bio-based

Multiple approaches with proprietary technology

Polyethylenefuranoate (PEF)

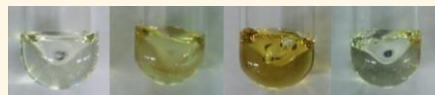
- PEF ← FDCA + EG
(FDCA : 2,5-furandicarboxylic acid)
- Features
 - Physical characteristics close to PET
 - Excellent barrier properties
 - 100% bio-based is possible
- FDCA commercial production by Avantium, Netherlands (from 2023)

Biomass Plastics

Carbon Neutral

Aluminum based catalyst "TOYOBO GS Catalyst"

- Polyester polymerization catalyst
- Features
 - Excellent recyclability (Thermal stability)
 - Small resin deterioration even with repeated melt molding
 - Heavy metals free
- License to Indorama, Thailand



GS Catalyst Other Catalyst

Thermal deterioration test at 300°C X 2hrs. in nitrogen

Mechanical Recycling

Technical support by R Plus Japan, Ltd.

- Supporting the technology development of Anellotech in the US
- Features
 - Thermal decomposition of a wide range of waste plastics
 - Direct conversion to crude raw material without going through the oil conversion process
- Practical use and license in 2027

R PLUS JAPAN

Chemical Recycling

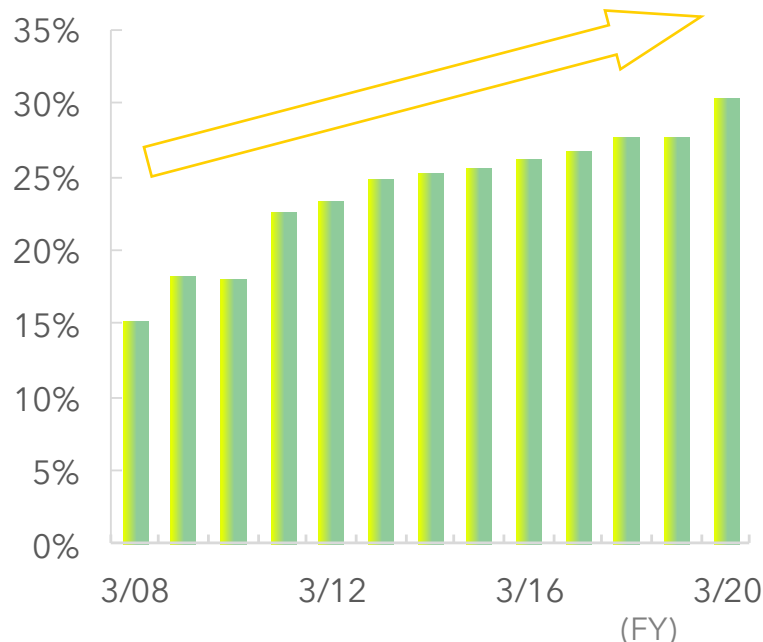
Environmentally Friendly Business | "ECO-PARTNER SYSTEM"



- Our company independently evaluates and certifies environmental impact (implemented since 1998).
- The product life cycle (from raw materials to disposal) is divided into 6 stages, and the environmental impact of each stage is evaluated.

Viewpoints: waste reduction / global warming prevention / resource conservation /
chemical substance reduction / other environmental contributions

Sales ratio of "ECO-PARTNER SYSTEM"



**Targets: 40% in FY 3/31
60% in FY 3/51**

Sales in FY 3/20: ¥ 60.6 bn. (30%)

*total results for TOYOBO on a non-consolidated basis

"ELITOLON"

A filter that collects dust in the atmosphere with static electricity



VOC emissions treatment equipment

Equipment / elements for recovering methylene chloride used in the lithium-ion battery manufacturing process

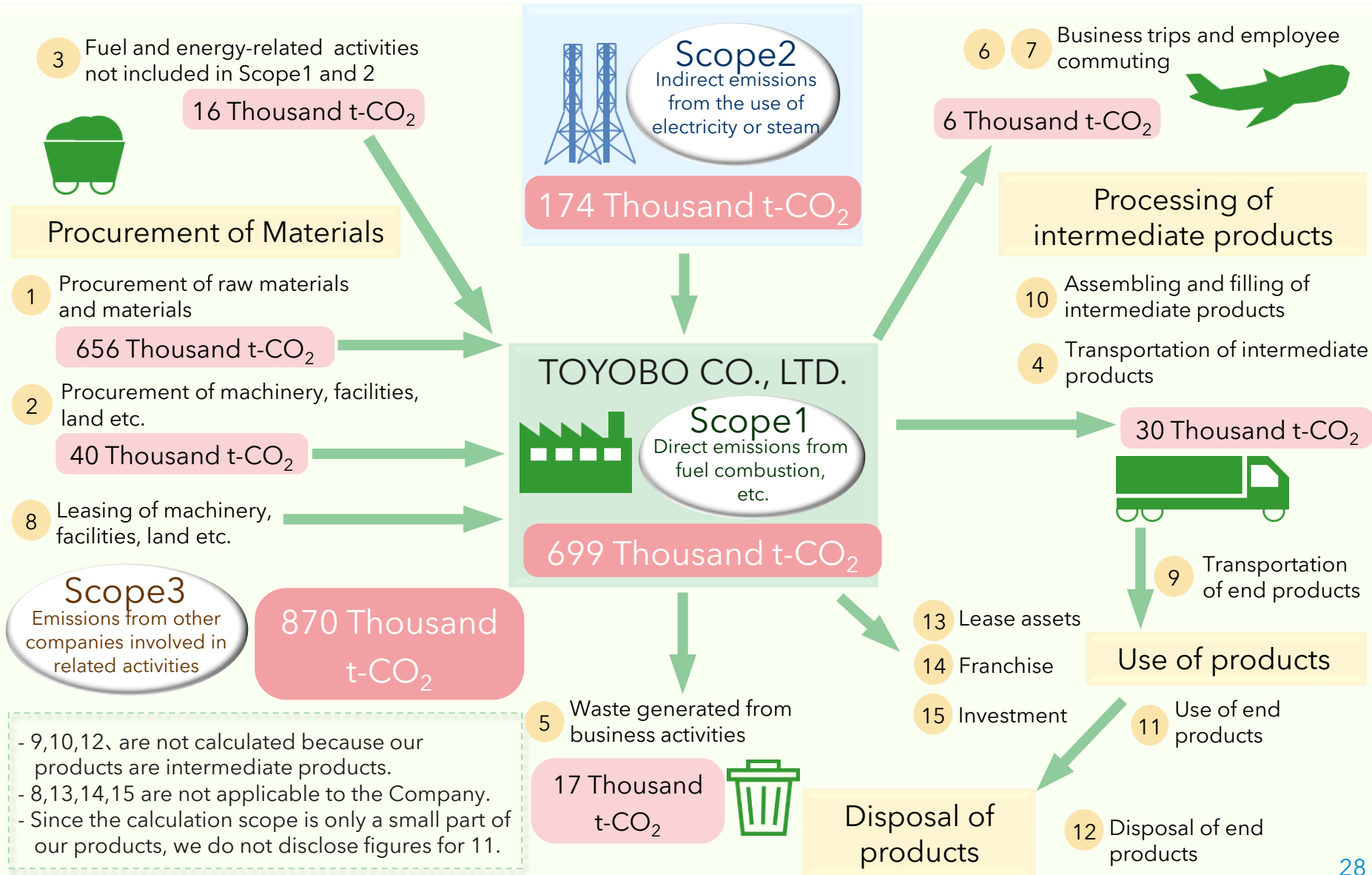
● PEN film "Teonex"

A sealing material used for sealing fuel cell battery cells.
Adopted in Toyota's new fuel cell vehicle "MIRAI"



Towards Zero CO₂ Emission |

Current CO₂ Emissions

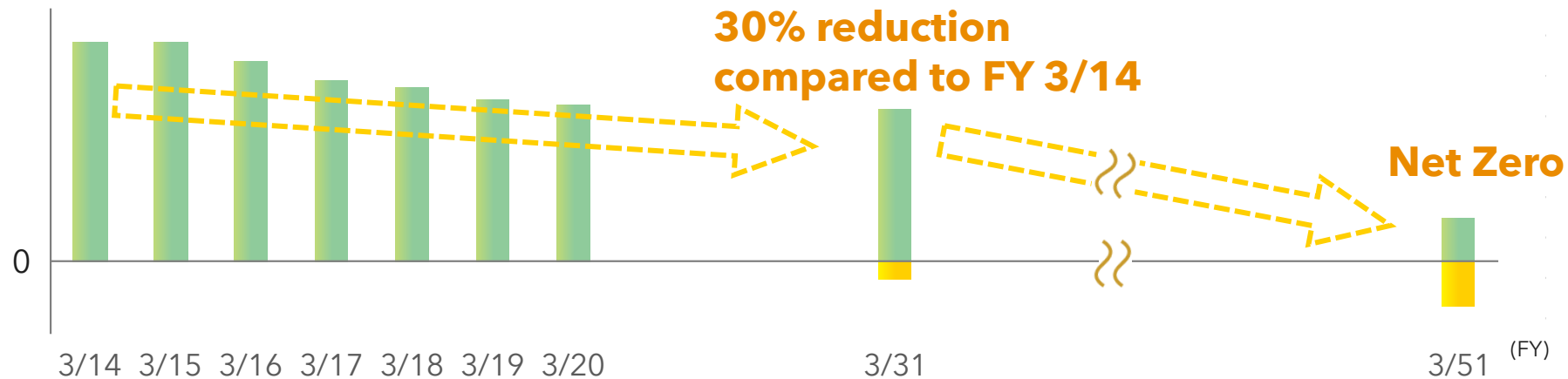


Toward zero CO2 emissions |

Methods of achievement

Greenhouse gas emissions

Thousand t-CO₂



By FY3/31:
30% reduction compared to FY 3/14

Scope 1 and 2 reduction promotion

With the introduction of gas co-generation systems, shifting from coal to natural gas

- Tsuruga Research and Production Center
- Iwakuni Production Center
- Inuyama Plant

By FY3/51:
Zero CO₂ emissions in real terms
Scope 1~3 reduction promotion

- Chemical recycling (R Plus Japan, Ltd.)
- PET bottle recycling
- Processing film recycling
- Bioplastics
- Seawater desalination and FO membranes for pressure retarded osmosis
- CO₂ separation membrane
- Rechargeable battery for renewable energy etc.



4. Concept of the Next Medium-Term Management Plan: Realization of Sustainability Management

Concept of the Next Medium-Term Management Plan

Achieving both ESG and earnings generation ability

Measure 2:

Reorganization of the business portfolio

1. Concentration of resources toward priority expansion projects
2. Improvement of asset efficiency

Measure 4:

Laying the foundation for sustainable growth

Measure 1:

Thorough safety, disaster prevention, and quality assurance

Measure 3:

Preparations for the future

**Sustainability Vision
2030**
(sustainable Growth)

Backcasting

FY 3/21

2022 MTP

FY 3/26

MTP for the term

FY 3/31

"4 years to remake and prepare"

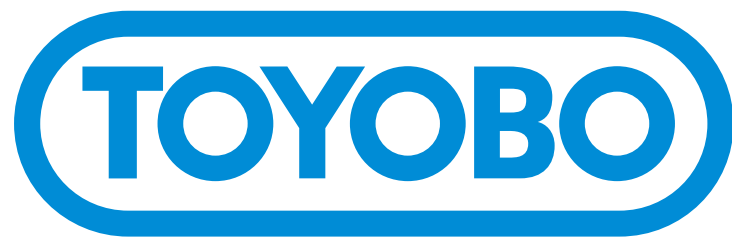
after next term "Achieve growth"

Please Note

The business performance forecasts and targets included in the business plans contained in this presentation are based on information known to the Company's management as of the day of presentation. Please be aware that the content of the future forecasts may differ significantly from actual results, due to a number of unforeseeable factors.

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